

WHAT IS CLAIMED IS:

1. An information storage medium evaluation method for evaluating an information storage medium, which comprises a wobbled track that is used to guide a light beam and is wobbled in correspondence with a frequency, a phase of which is modulated at predetermined timings to reflect predetermined information, comprising:

squaring a reproduction signal corresponding to the wobbled track, obtained from reflected light of the light beam with which the wobbled track is irradiated; and

evaluating quality of the wobbled track on the basis of frequency characteristics of the squared reproduction signal.

2. A method according to claim 1, wherein when a difference between peak and noise levels obtained from the frequency characteristics of the squared reproduction signal becomes not less than 17 dB, it is determined that the quality of the wobbled track meets a predetermined standard.

3. An information storage medium evaluation apparatus for evaluating an information storage medium, which comprises a wobbled track that is used to guide a light beam and is wobbled in correspondence with a frequency, a phase of which is modulated at predetermined timings to reflect predetermined

information, comprising:

a detection unit configured to detect reflected light of a light beam with which the wobbled track formed on the information storage medium is irradiated;

5 a filter unit configured to suppress noise from a reproduction signal corresponding to the wobbled track on the basis of the reflected light detected by the detection unit;

10 a squaring unit configured to square the reproduction signal from which the noise is suppressed by the filter unit; and

15 an evaluation unit configured to evaluate quality of the wobbled track on the basis of frequency characteristics of the squared reproduction signal squared by the squaring unit.

4. An apparatus according to claim 3, wherein when the squaring unit squares a predetermined sine wave and outputs the squared sine wave, a peak level at a predetermined frequency obtained from frequency
20 characteristics of the sine wave appears at a frequency twice the predetermined frequency in frequency characteristics of the squared sine wave, and

25 the evaluation unit has characteristics that set a residual peak level corresponding to a residual level in a carrier component obtained from the frequency characteristics of the squared sine wave to be lower by not less than 30 dB than a peak level that appears at

the frequency twice the predetermined frequency.

5 5. An apparatus according to claim 3, wherein
when the squaring unit multiplies a predetermined sine
wave containing a noise component and outputs the
squared sine wave, a peak level at a predetermined
frequency obtained from frequency characteristics of
the sine wave appears at a frequency twice the
predetermined frequency in frequency characteristics of
the squared sine wave, and
10 the evaluation unit has characteristics that set a
difference between a first difference between peak and
noise levels obtained from the frequency charac-
teristics of the sine wave and a second difference
between peak and noise levels obtained from the
15 frequency characteristics of the squared sine wave to
be not more than 7 dB.

 6. An information storage medium for storing
information, comprising:

 an information storage area for storing
20 information; and

 a wobbled track which is used to guide a light
beam on the information storage area, and is wobbled in
correspondence with a frequency, a phase of which is
modulated at predetermined timings to reflect
25 predetermined information,

 wherein the wobbled track is formed so that when
a reproduction signal corresponding to the wobbled

track obtained from reflected light of a light beam,
with which the wobbled track is irradiated, is squared,
and the squared reproduction signal is evaluated on the
basis of frequency characteristics of the squared
5 reproduction signal, a difference between peak and
noise levels obtained from the frequency
characteristics of the squared reproduction signal
becomes not less than 17 dB.

7. A medium according to claim 6, wherein the
10 wobbled track is formed so that

a peak level at a predetermined frequency obtained
from frequency characteristics of the reproduction
signal appears at a frequency twice the predetermined
frequency in the frequency characteristics of the
15 squared reproduction signal, and

a residual peak level corresponding to a residual
level in a carrier component obtained from the
frequency characteristics of the squared reproduction
signal is lower by not less than 30 dB than the peak
20 level which appears at the frequency twice the
predetermined frequency.

8. An information reproduction apparatus for
reproducing information from an information storage
medium on which a wobbled track, which is wobbled at a
25 frequency, a phase of which is modulated at predeter-
mined timings to reflect predetermined information, is
formed, so that an evaluation result based on frequency

characteristics of a squared reproduction signal
obtained by squaring a reproduction signal
corresponding to the wobbled track, obtained from
reflected light of a light beam with which the wobbled
5 track is irradiated, meets a predetermined evaluation
measure, comprising:

a detection unit configured to detect the
reflected light of the light beam with which the
wobbled track formed on the information storage medium
10 is irradiated; and

a reproduction unit configured to reproduce the
predetermined information reflected on the wobbled
track on the basis of the reflected light detected by
the detection unit.

15 9. An information reproduction method for
reproducing information from an information storage
medium on which a wobbled track, which is wobbled at a
frequency, a phase of which is modulated at predeter-
mined timings to reflect predetermined information, is
20 formed, so that an evaluation result based on frequency
characteristics of a squared reproduction signal
obtained by squaring a reproduction signal
corresponding to the wobbled track, obtained from
reflected light of a light beam with which the wobbled
25 track is irradiated, meets a predetermined evaluation
measure, comprising:

detecting the reflected light of the light beam

with which the wobbled track formed on the information storage medium is irradiated; and

reproducing the predetermined information reflected on the wobbled track on the basis of the detected reflected light.

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10. An information recording method for recording information on an information storage medium on which a wobbled track, which is wobbled at a frequency, a phase of which is modulated at predetermined timings to reflect predetermined information, is formed, so that an evaluation result based on frequency characteristics of a squared reproduction signal obtained by squaring a reproduction signal corresponding to the wobbled track, obtained from reflected light of a light beam with which the wobbled track is irradiated, meets a predetermined evaluation measure, comprising:

detecting the reflected light of the light beam with which the wobbled track formed on the information storage medium is irradiated;

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reproducing the predetermined information reflected on the wobbled track on the basis of the detected reflected light; and

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recording information on the information storage medium on the basis of the reproduced predetermined information.